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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,756	03/25/2004	Michael Vrazel	07982.105020 US	7339

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KING & SPALDING LLP
191 PEACHTREE STREET, N.E.
ATLANTA, GA 30303-1763

EXAMINER	
BAYARD, EMMANUEL	
ART UNIT	**PAPER NUMBER**
2631	

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/809,756	VRAZEL, MICHAEL	
	Examiner	Art Unit	
	Emmanuel Bayard	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-24are rejected under 35 U.S.C. 102(e) as being anticipated by Babanczhad U.S. Patent no 6,169,764 B1.

As per claims 1, 7 and 17 Babanczhad teaches a signal processing method comprising the steps of: receiving a signal having a level of distortion (see figs. 1, 2, 4 element IN and col.1, lines 10-25); filtering the signal according to a filter parameter to reduce the level of distortion (see figs. 1, 4 elements 100, 600 and col.2, lines 40-44); comparing the filtered signal to a reference (see figs. 1, 2, 4 elements 102 and col.2, lines 48-50 and col.3, lines 10-27); generating a quantized signal (see fig.2 e col.1, lines 41-42 and col.3, lines 10-11), having at least two signal levels (see fig.2 element b-, b+), based on the comparison; detecting a signal parameter of each of the filtered signal and the quantized signal (see figs. 1, 2, 4 elements 106, 108 and col.2, lines 51-58); squaring circuitry is the same as the claimed (detecting an energy) (see figs. 1, 4 elements 110 and 112 and col.2, lines 57-64)in each of the filtered signal and the quantized signal. Note that Squaring circuitry is well known in the art as to calculate energy level of the signals. Therefore the squaring circuitry of Babanzchad is the equivalent to the claimed (detecting

an energy); adjusting the filter parameter based on the signal parameter of the filtered signal, the signal parameter of the quantized signal, and at least one of the detected energies (see figs 1, 2, 4 elements 104, 304, 604 and col.2, lines 47-67 and col.4, lines 14-23); and responsive to the adjusting step, further reducing the level of distortion (see figs. 1, 4 and col.4, lines 25-67 and col.5, lines 1-26).

As per claim 2, Babanzchad inherently teaches detecting a second energy in a frequency component of each of the filtered signal and the quantized signal.

As per claim 3, Babanzchad inherently teaches the signal has a data rate; and detecting the signal parameter comprises detecting a second energy in a component of each of the filtered signal and the quantized signal, the component having a frequency higher than one half of the data rate.

As per claim 4, Babanzchad inherently teaches the signal has a data rate and detecting the energy comprises detecting the energy in a component in each of the filtered signal and the quantized signal, the component having a 5 frequency less than the data rate.

As per claim 5, Babanzchad inherently teaches the steps of: scaling the signal parameter of the filtered signal based on the energy in the quantized signal; and scaling the signal parameter of the quantized signal based on the energy in the filtered signal.

As per claim 6, Babanzchad inherently teaches the steps of: scaling the signal parameter of the filtered signal based on the energy in the quantized signal; scaling the signal parameter of the quantized signal based on the energy in the filtered signal; and comparing the scaled signal parameter of the filtered signal to the scaled signal parameter

of the quantized signal, wherein the adjusting step comprises adjusting the filter parameter based on the comparison.

As per claim 8, Babanzchad inherently teaches monitoring the low-frequency energy comprises determining a difference between the monitored low-frequency energy in the equalized communication signal and the monitored low-frequency energy in the quantized communication signal; and the comparing step comprises comparing the monitored parameter in the equalized communication signal to the monitored parameter in the quantized communication signal and compensating the comparison according to the 25 difference in the low-frequency energy.

As per claim 9, Babanzchad inherently teaches monitoring the low-frequency energy comprises: monitoring the low-frequency energy in the equalized communication signal; and 5 monitoring the low-frequency energy in the quantized communication signal; and the comparing step comprises: scaling the monitored parameter in the equalized communication signal based on the monitored low-frequency energy in the quantized communication signal; scaling the monitored parameter in the quantized communication signal based on the monitored low-frequency energy in the equalized communication signal; and comparing the scaled parameter of the equalized communication signal to the scaled parameter of the quantized communication signal.

As per claim 10, Babanzchad inherently teaches the steps of: transmitting the communication signal through a medium; causing a distortion of the communication signal with the medium; and receiving the distorted communication signal from the medium, wherein the applying step comprises applying the degree of equalization to the received communication signal to correct the distortion.

As per claim 11, Babanzchad inherently teaches wherein the parameter comprises edge energy.

As per claim 12, Babanzchad inherently teaches detecting a power in a frequency component in each of the equalized communication signal and the quantized communication signal.

As per claim 13, Babanzchad inherently teaches wherein monitoring the parameter comprises detecting a power in a high-frequency component in each of the equalized communication signal and the quantized communication signal, wherein the frequency of the high frequency component is greater than one half of the data rate.

As per claim 14, Babanzchad teaches wherein quantizing the equalized communication signal comprises processing the equalized communication signal with a comparator (see col.3, lines 10-15).

As per claim 15, Babanzchad teaches wherein applying the degree of equalization to the communication signal comprises filtering the communication signal (see element 100).

As per claim 16, Babanzchad inherently teaches, wherein applying the degree of equalization to the communication signal comprises processing the communication signal with a Bode equalizer.

As per claim 18, Babanzchad inherently teaches wherein the filter is operative to compensate for a distortion in the communication signal.

As per claim 19, Babanzchad teaches wherein the filter comprises an equalizing filter (see fig. element 100).

As per claim 20, Babanzchad inherently teaches, wherein the control circuit comprises: a high-pass filter, passing electric signals with frequencies above a first frequency threshold and attenuating electric signals with frequencies below the first frequency threshold; and a low-pass filter, passing electric signals with frequencies below a second frequency threshold and attenuating electric signals with frequencies above the second frequency threshold.

As per claim 21, Babanzchad inherently teaches, wherein the control circuit is further operative to adjust the filter in response to a difference between a first edge energy of the communication signal at the filter output and a second edge energy of the communication signal at the comparator output.

As per claim 22, Babanzchad inherently teaches, wherein the filter comprises a Bode equalizer.

As per claim 23, Babanzchad inherently teaches, wherein the control circuit is further operative to provide equalization to the communication signal by reducing a difference between edge energy of the communication signal at the filter output and the edge energy of the communication signal at the comparator output.

As per claim 24, Babanzchad inherently teaches wherein the comparator is further 10 operative to quantize the communication signal.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Baker et al U.S. patent No 5,978,417 teaches an adaptive cable equalizer.

Baugh U.S. Patent No 5,774,505 teaches an intersymbol interference.

Noda et al U.S. patent No 5,617, 135 teaches a multi-point visual communication.

Tovar U.S. patent No 5,699,022 teaches an adaptive cable equalizer.

Yeap et al U.S. patent no 6,052,420 teach an adaptive multiple sub-bands common-mode.

Huber U.S. patent No 4,953,041 teaches a read channel detector.

Shimazaki et al U.S. Patent No 5,483,552 teaches an adaptive equalizing apparatus.

Thyssen et al U.S. Patent No 6,751,587 B2 teaches an efficient excitation quantization.

Belfield U.S. patent No 4,475,227 teaches an adaptive prediction.

Yang et al U.S. patent No 5,648,987 teaches a rapid update adaptive channel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 703 308-9573. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM) Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 703 306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Emmanuel Bayard
Primary Examiner
Art Unit 2631

8/12/04

EMMANUEL BAYARD
PRIMARY EXAMINER